

CERTAIN NEW TAXA OF *EUASTRUM SPINULOSUM*  
(DESMIDIACEAE)  
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ABSTRACT. — Three new taxa of *Euastrum spinulosum* Delponte (viz. var. *emarginatum* Bongale var. nov., var. *octogonum* Bongale var. nov., and var. *octogonum* fa. *protrudens* Bongale fa. nov.) and another showing major variations (subsp. *africanum* var. *africanum* Nordst.) are reported.

RÉSUMÉ. — Trois nouveaux taxons d'*Euastrum spinulosum* Delponte sont décrits (var. *emarginatum* Bongale var. nov., var. *octogonum* Bongale var. nov., et var. *octogonum* fa. *protrudens* Bongale fa. nov.) ainsi qu'une autre forme montrant de grandes variations (subsp. *africanum* var. *africanum* Nordst.). (traduit par la rédaction).

KEY WORDS : Desmids, systematics, South India.

Algae were collected from a paddy field at Belgaum of Belgaum district (15°22' to 16°58' north latitude and 74°02' to 75°25' east longitude) during August 1985 and were preserved in 4 % formaldehyde for further study. Field water had pH of 6.5 with 40 day old standing crop of paddy at the time of collections. Specimens are deposited at Algal Laboratory of this Department.

*Euastrum spinulosum* subsp. *africanum* var. *africanum* Nordst. fa. (Text fig. 4)

Cells 70-76  $\mu$ m long, 55-57  $\mu$ m wide, isthmus 16  $\mu$ m.

Differs from the type (in Grönblad & Croasdale 1971, p. 11, Figs. 42, 137) mainly in shape of lobes and indentations as also in the type of ornamentation on lobes and in being smaller.

*Euastrum spinulosum* var. *emarginatum* var. nov. (Text. Fig. 3) :

*Cellulae elongatae et valde emarginatae; lobi tumescentes, late et rotundate incisi; isthmus angustus, sinus apertus; dentes crassi; illi ad lobos superiores et apicales confertiores; annulus spinarum parvus in lateribus utrisque inferioribus*

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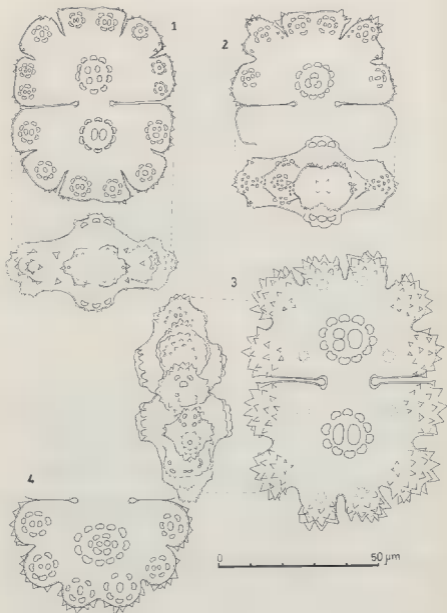


Fig. 1 : *Euastrum spinulosum* var. *octogonum* Bongale var. nov. — Fig. 2 : *E. spinulosum* var. *octogonum* fa. *protrudens* Bongale fa. nov. — Fig. 3 : *E. spinulosum* var. *emarginatum* Bongale var. nov. — Fig. 4 : *E. spinulosum* subsp. *africanum* var. *africanum* Nords. fa.

*rosulae centralis; rosula centralis distincta; 68-92 µm latae, isthmus 13-14 µm, a latere visae 31-33 µm crassae.*

*Typus: KUDB-BGM/85-1-87.*

Cells elongated with a deep apical notch; lobes bulged with widely rounded indentations in between; isthmus narrow; sinus open; teeth stout, those of upper lateral and apical lobes more crowded; a ring of small spines each on two lower sides of central rosette; central rosette prominent; 68-92 µm long, 59-62 µm wide, isthmus 13-14 µm, 31-33 µm broad in lateral view.

Differs from the type (in Scott & Prescott 1961, p. 40, pl. 10, fig. 3) in upper lateral lobes being more bulged, isthmus slightly narrower, teeth stouter, central rosette larger and in having more crowded teeth on upper lateral and apical lobes, additional ring of small spines on two lower sides of central rosette and in having the deep apical notch. The alga resembles var. *orbiculare* (Wall.) De Wildeman (1884) in having deep apical notch, but differs in other major characters. It can also be considered nearer to var. *lindae* fa. *minor* Couté et Rousselin (1975, p. 100, pl. 4, fig. 5) but much differs in shape of cells and indentations and in type of ornamentations.

*Euastrum spinulosum* var. *octogonum* var. nov. (Text fig. 1) :

*Cellulae fere octogonae; lobi incisi oblique complanati; lobi polares et inferiores laterales leviter incisi; sinus leviter apertus; isthmus angustus; ornamentum centrale et illud in lobis velut annuli circulares et simul manifestum; spinae marginales paucae et parvae, superficies cetera laevis; 60-67 µm longae, 45-52 µm crassae, isthmus 9-10 µm, a summo visae 30-32 µm.*

*Typus: KUDB-BGM/85-1-42.*

Cells nearly octagonal; lobes obliquely flattened with deep acute indentations in between; polar lobes and lower lateral lobes with slight incision; sinus slightly open; isthmus narrow; central ornamentation and those on lobes as circular rings and prominent; marginal spines sparse and small; rest of surface smooth; 60-67 µm long, 45-52 µm broad, isthmus 9-10 µm, 30-32 µm broad in top view.

The alga can also be compared with var. *vaasii* Scott et Prescott (1961, p. 41, pl. 10, fig. 6) in the shape of cells, but much differs in absence of emerging verrucae on lobes and indentations being not rounded, apart from absence of spines over the surface.

*Euastrum spinulosum* var. *octogonum* Bongale fa. *protrudens* fa. nov.

(Text fig. 2) :

*Forma cellularum velut in var. octogonum var. nov.; lobi superiores lateralesque leviter divisi parte superiore dimidio emergens et ornatu dentibus magnis, et dentes quoque ad angulum laterale loborum polarium; sinus clausus; isthmus angustus; 60-62 µm longae, 48-52 µm latae, isthmus 12-13 µm, a summo visae 29-30 µm.*

*Typus* : KUDB-BGM/85-1-42a.

Shape of cells same as in var. *octogonum* var. nov., upper lateral lobes slightly divided with upper half portion emerging and ornamented with large teeth, in addition to the teeth at side angle of polar lobes; sinus close; isthmus narrow; 60-62  $\mu\text{m}$  long, 48-52  $\mu\text{m}$  wide, isthmus 12-13  $\mu\text{m}$ , 29-30  $\mu\text{m}$  broad in top view.

Differs from var. *octogonum* var. nov. (Fig. 1) in having upper lateral lobes with protruding upper half, in having larger teeth, sinus being closed and isthmus slightly wider.

#### ACKNOWLEDGEMENTS

I am grateful to Prof. G.W. Prescott, New York, USA for his critical observations on the drawings and to Mrs.-Angela Shipman, Exeter, USA for the latin diagnoses.

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